

Facilities Quarterly

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY ♦ FACILITIES DEPARTMENT NEWSLETTER

APRIL
2000

GRIZZLY SUB UPGRADES TO BEGIN

This June, upgrade work will begin at Grizzly Substation that will further enhance the Lab's rejuvenated 12-kV electrical supply system. The \$4 million project will start after UC Berkeley's new Hill Area Substation, now under construction just south of Grizzly Substation, is completed this spring.

Located on Glaser Road near Building 77, Grizzly Sub's high-voltage lines, towers, transformers and switchgear supply electricity to the entire Berkeley Lab site. Two banks of transformers receive power from

PG&E's 115-kV transmission lines, step it down to 12 kV, and distribute it through multiple 12-kV feeders to a number of Berkeley Lab and (until the Hill Area substation is complete) UC Berkeley switching stations. Transformer Bank 1 provides 20 MVA for pulsed loads, such as the Advanced Light Source and 88-Inch Cyclotron. Bank 2 provides 30 MVA for all other uses on the Hill and the UC Berkeley campus. Grizzly Substation also feeds cogenerated power from UC's central steam heating plant to the PG&E grid.

The current round of construction was set in motion by the University of California's decision in 1993 to exercise an option to purchase Grizzly Substation from PG&E. By owning the substation, the University would be able to purchase power from PG&E at 115-kV transmission line rates rather than the much higher "primary" rates charged on the 12-kV side of the transformers. It was an opportunity the University couldn't pass up: the energy cost savings would yield a payback of about two years on the purchase of the substation.

In addition to saving on its electric bill, the University had big plans to revamp the station, doubling its capacity from 50 MVA to 100 MVA to handle projected demand on the UC Berkeley campus. Although Berkeley Lab stood to benefit from better electrical rates, the University's planned

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Grizzly Substation and, in the right background, the new Hill Area Substation

BUILDING 29 EVACUATED

The last week of January 2000, an employee working in Building 29A found strange little bugs on her office window. Little did she know that this discovery would lead to the evacuation of one of the oldest buildings at Berkeley Lab, Building 29.

Built in the early 1940s and one of the first administration buildings at the Lab, Building 29 fell victim not only to time but also to its building material and locale. One of the few wooden buildings at the Lab, Building 29 had become infested with termites, of both the airborne and subterranean variety, as well as the dry rot that comes with a wet, shady microclimate. "We live in the woods here," said

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<http://www.lbl.gov/Workplace/Facilities>.

GRIZZLY SUBSTATION

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upgrades had the potential to limit the Lab's flexibility, especially in hooking up equipment that has pulsing power. After extensive negotiations between DOE/Berkeley Lab and UC Berkeley Regents, a win-win agreement emerged in 1995: UC would build the Hill Area substation, upgrade Grizzly (at DOE's expense), and then deed Grizzly to DOE.

According to Berkeley Lab Facilities Department Deputy Head Bert Schleifer, Grizzly Substation, though built in the '50s,

is "in principal, still a good sub. What I like is that Grizzly Substation was built with a lot of capability and redundancy." For example, unlike the Hill Area Substation's integrated transformers, Grizzly Sub has a separate transformer for each of the three phases of high-voltage power, as well as a fourth spare. (Three-phase power uses three power lines, each carrying 60-Hz alternating current, but with the alternations out of phase with each other by 120 degrees.) If one of the three transformers has to be shut down, the spare can be brought on line quickly to prevent an extended outage. Grizzly's two trans-

former banks are also interconnected, so that they back each other up. When all work is complete, the 12-kV system will be even more reliable, with Grizzly and Hill Area stations providing backup for each other. In addition, should PG&E have an extended outage Berkeley Lab will have emergency access to UC Berkeley's cogenerated power (pending negotiations with UC to begin in the near future).

The improvements to Grizzly Substation will include replacement of Transformer Bank 1, which will be upgraded to 30 MVA and made identical to Bank 2. According to Schleifer, this will remedy problems with induced currents caused by differences between the two banks. Other work will include construction of improved oil spill containment facilities, installation of new controls and a control shelter, installation of 115 kV metering facilities, addition of a 115 kV tie-breaker circuit breaker, construction of grounding system improvements, and incidental repairs to existing structures. Work is expected to begin in June 2000, with completion in early 2001. During construction Grizzly Substation will be de-energized and all electrical power for LBNL will come from the Hill Area Substation.

As sole user of Grizzly Sub, Berkeley Lab will benefit in a number of ways. According to Schleifer, "There will not be a need in the future to negotiate how much power we can assign to LBNL. And we can be free to resolve quality issues ourselves." Additional benefits will include lower maintenance and operating costs than those associated with third party ownership, and lower energy costs through purchase of electrical power at the 115-kV transmission level.

With a total capacity of about 60 MVA, the Grizzly Substation has enough electrical capacity to supply a small city. That's enough power to meet Berkeley Lab's energy needs well into the century. The high capacity and reliability promises stable, reliable power for Berkeley Lab's current programs, as well as a ready, flexible power supply for the future.

The project manager for the Grizzly Substation Post-Procurement Improvements Project is Chuck Taberski. He can be reached at extension 6076.



FROM THE FACILITIES MANAGER...

Despite our extraordinary efforts in maintaining a plant that dates back nearly 60 years in some areas, we lost Building 29 to the ravages of nature.

This comes at a particularly bad time with the Department of Energy in flux, growth in the Laboratory ramping up, and funding tight from the work that must be done to keep operating. I wish to thank Life Sciences and Engineering Divisions, especially Alope Chatterjee and Joe Jaklevic, for their cooperation on what was very short notice. Our department should also take a bow for its excellent performance under pressure to ensure the safety of and minimize the inconvenience to the occupants of Building 29. The riggers once again proved their mettle in getting research equipment out of the building. As for the future, when 29 is demolished it yields an excellent building site. In the meantime, the Lab Fire Department will use it on weekends for training; they certainly cannot damage it much more unless it burns down. An observation – not a suggestion.

I would like to take a few words to push safety. Our recordable accidents are increasing. While Facilities is below the national average for construction work, we are above the average for DOE Laboratories. WOW has made a significant difference, but we still have too many accidents that could have been prevented by wearing personal protective equipment. Cuts that gloves would have prevented, eye injuries that safety glasses would have prevented, and the list continues. It is mandatory that each of us stop and think about the safe way to do our work before we start the job—not after there has been an injury.

Bob Camper

Work SMART...

WORK SAFELY...

If it is not safe, STOP the work.

FACILITIES DEPARTMENT

Facilities provides Berkeley Lab with a full range of architectural and engineering, construction, and maintenance services for new facilities and for modification and support of existing facilities.

Architectural and engineering services include facility planning, programming, design, engineering, project management, and construction management. Maintenance and construction functions include custodial, gardening, and lighting services; operation, service, and repair or replacement of equipment and utility systems; and construction of modifications, alterations, and additions to buildings, equipment, facilities, and utilities. Additional services include bus

and fleet management, mail distribution, stores distribution, property management, property disposal, cafeteria operations, and electronics repair.

Ongoing Facilities activities include renewal and upgrade of site utility systems and building equipment; preparation of environmental planning studies; in-house energy management; space planning; and assurance of Laboratory compliance with appropriate facilities-related regulations and with University and DOE policies and procedures.

The Work Request Center expedites facility-related work requests, answers questions, and provides support for facility-related needs.

FOCUS ON SERVICE: Year-End Furniture Purchases

Over a year ago, Procurement and Facilities implemented the turnkey furniture acquisition option of the University of California's subcontract with Steelcase, Inc. This turnkey system includes a broad range of services in the purchase price of the furniture, from space planning, furniture selection, and ordering to delivery and installation—and all the steps in between.

On January 15, Steelcase implemented internal changes in its processing of the contract with UC, and the majority of services are now provided by One Workplace (the product of a merger of Lindsay-Ferrari and Rucker Fuller). Unfortunately, projects caught in transition suffered delays, but the new system seems to be getting into gear and, it is hoped, will soon be functioning to the satisfaction of all involved—and in time for the usual rush of furniture orders at the end of the fiscal year. However, it isn't too early to start planning your end-of-FY-2000 furniture procurements.

The LBNL procedure for ordering furniture is coordinated by the Facilities architectural section, and has not changed. A furniture order is initiated by contacting the Work Request Center, preferably by email (see the bottom of

this page for contact information). Include the project location; a brief description of the scope; your (the requester's) name, phone and fax numbers; and the account number.

A Facilities space planner will contact the requester if design work or clarifications are required. If a quote can be prepared without further information, the One Workplace administrator will contact the requester to acknowledge receipt of the order. The space planner will then send the requester a "Request for Furniture Delivery" form, with a quote, for approval and account authorization signature. It is crucial that the requester fax the signed form to the space planner as soon as possible, since the order cannot be placed with Steelcase until the signed form is received.

Once the order is placed with Steelcase, you can obtain a status report by calling 1-877-722-9090 and providing the UC number shown on the top of the "Request for Furniture Delivery" form.

The process covers development of layouts, preparation of specifications and quotes, order entries, manufac-

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COMPLIMENTS

Helen Jefferson of Administrative Services writes, "We in Building 84, 3rd Floor, recently experienced wonderful service from your plumbers. In particular, Tom Reese was helpful to us in obtaining an instant hot water tap for our kitchen. It's always a pleasure when the Facilities crews are on hand to do a job in record time and with such pleasant attitudes."

Facilities' relocation efforts at Bldg 29 (see page 1), received this boost from Jim Triplett of Operations. "Your people are working hard to make all of this work. Thanks for the support."

John Yates, Director of the the DOE Laboratory Infrastructure Division, has praise for Facilities' Project Status website (www.lbl.gov/Workplace/Facilities/Projects/status). Says Yates, "We have urged our labs to adopt the web as a means of conveying planning info, including projects status reports. Berkeley is a leader in this effort."

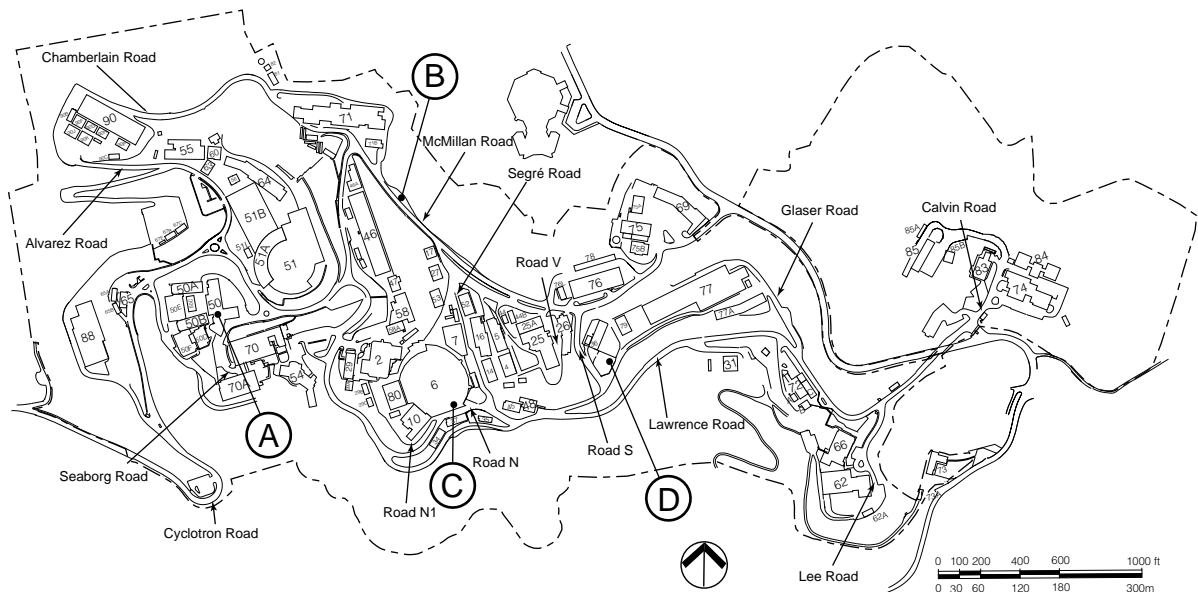
WORK REQUEST CENTER

Telephone	6274
Fax	7805
E-Mail	WRC@lbl.gov
Mailstop	76-222
Web	web3.lbl.gov/wrc

WRC welcomes questions or comments about Facilities Quarterly.

CONSTRUCTION AND YOU

Current construction projects affecting parking, or vehicular or pedestrian circulation



Project Contacts. The name in parentheses after each project is the Project Manager (PM) or other person who is responsible for project oversight: coordinating all phases from design through construction; controlling cost, scope and schedule; and ensuring client satisfaction. This person will be happy to answer any questions about the project.

Bldg 50: Chiller and Cooling Tower Replacement

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Construction is scheduled to start in late March on the roof of Building 50. The contractor laydown area and crane location for two to three days of hoisting operations is in the process of being identified. (Lonny Simonian, x 6088)

Blackberry Switching Station

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The contractor will continue to occupy the laydown area on McMillan Road until May 2000. Lab employees can expect intermittent traffic delays near the intersection of McMillan Rd, Cyclotron Rd, and Lawrence Rd until June 2000. (Chuck Taberski, x6076)

Bldg 6: 2nd Floor Office & Lab Buildout

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Parking spaces along the south side of Bldg 6 will be reserved for contractor use. (Richard Stanton, x6221)

UC Hill Area Substation

APR	MAY	JUN	D
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UC Berkeley is constructing a new electrical substation at the corner of S Road and Glaser Road. Construction will be limited to the actual site of the substation itself, but Lab employees can expect slow-moving construction vehicles and occasional closures of Glaser Road while the contractor is installing underground duct banks and electrical-equipment supporting structures on the down-slope side of Glaser Road. Construction is scheduled to be completed by June 2000. (Chuck Taberski, x6076)

“CAUTION—CONSTRUCTION AREA”

Construction barricades and warnings are there for your protection. Under no circumstances should you cross a construction barricade, or disobey posted warnings or directions. Contact the Project Manager for escorted access to construction areas.

ON THE DRAWING BOARD

projects in study or conceptual design

Rehabilitation of Site Mechanical Utilities, Phase 2

This project will extend the useful lives of the natural gas, low conductivity water (LCW), compressed air, and storm drain systems. All service risers in the natural gas system will be replaced with nonmetallic pipe. LCW system aluminum pipe will be replaced with stainless-steel pipe. Cathodic protection will be added to the compressed air system. Steel pipe in the storm drain system will be replaced or relined. Facilities has prepared a conceptual design report for FY2002 funding consideration. (Lonny Simonian, x6088)

Sitewide Water Distribution Upgrade, Phase 1

Much of Berkeley Lab's fresh-water supply system has been in place for over 30 years. This project will

replace about 0.9 mile (1.5 km) of cast iron pipe and upgrade the remaining 5 miles (8 km) of pipe with corrosion protection, new valves, pressure reducing stations, improvements to an existing water storage tank, and a new water storage tank in the East Canyon area. Facilities has prepared an updated conceptual design report for FY 2001 funding consideration. (Charles Allen, x6438)

Operations Building

Conceptual design is underway for a multiple-use building for Operations. The new structure is planned at approximately 2300 sq m (25,000 sq ft). (Danica Truchlikova, x6511)

IN PROGRESS

funded projects

Bldg 88: Seismic Anchoring

Architectural and engineering final design has begun to seismically reinforce caves 1 through 5. Phase design will identify specific caves for construction later this year. (Lonny Simonian, x6088)

Bldg 75: Lab Modifications

Architectural and engineering design will begin in early January to provide a new glove box collector system and a new fume hood collector system. This is the first phase of a three-phase project. (Chuck Taberski, x6076)

Bldg 2: HVAC Upgrade

Final design is in progress on upgrading air handler units 1 through 4 and modifying mechanical equipment and controls to correct heating, ventilation, and air conditioning deficiencies. (Lonny Simonian, x6088)

Blackberry Canyon Switching Station Replacement

Cable and equipment installation is in progress. The Blackberry Switching Station upper slab is complete and ready to receive the switching station. The contractor continues the slow process of installing the 12 kV feeders. During this phase of construction, manholes in the street will be opened and flaggers will direct traffic into single lanes at various times. No roads will be closed. Contract completion is scheduled for June 2000. (Chuck Taberski, x6076)

Bldg 6: Laboratory and Office Buildout

This project will build out approximately 1,100 sq m (12,000 sq ft) of laboratory, office, and research support space in the existing unfinished area on the second floor of Building 6. (Richard Stanton, x6221)

Bldg 77: Rehabilitation of Building Structure and Systems

The Architect/Engineers have completed final design, and construction sequencing is being finalized. This project will arrest differential settlement of Building 77, replace building cross bracing, and realign bridge crane runways. Upgrades to the building HVAC system and addition of thermal insulation will improve temperature controls, supporting the building's precision-engineering mission. Other improvements will include building architectural and electrical system upgrades. (Lonny Simonian, x6088)

JGI - Production Sequencing Facility

The final phase of outfitting Building 400 is underway and scheduled for completion in June 2000. This project will complete the second JGI sequencing facility with the installation of lab casework, furniture and research equipment. The JGI will occupy two sequencing facilities totaling 56,000 sq ft in Walnut Creek. Kirk Haley (5973)

EVACUATION

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Facilities Superintendent Bob Berninzoni in a recent interview, "with the animals and damp conditions. We see the skunks and the deer, but there are plenty of other animals that can cause problems." Adding to the problem, the Lab's former pest control subcontractor had failed to notice the termite infestation at Building 29.

Consequently, the invisible problem grew into an emergency. Once the first sighting was made, Berninzoni called in a termite inspector to carefully investigate the building. What the inspector found was a large colony of termites and the severe amount of damage they had caused. A wall in Building 29 had been almost completely hollowed out by the termites. Wall and floor joists had been eaten away, in addition to wooden connections to the foundation. "The inspector punctured the wall with a screwdriver and was able to push all the way through the wall as if it were wet cardboard," Berninzoni said. "We clearly had to take immediate action. If an earthquake were to happen, it would have been doubtful whether the building could have survived."

The evacuation of Building 29 started immediately on January 31. Both Life Sciences and Engineering research staff occupied the building, and both groups needed somewhere else to go. "Here, we were fortunate," said Facilities Planner Dick Dickey. "I was able to quickly identify space where people could move to. We happened to have space already available in Building 62 (for Engineering personnel) and Building 74 (for Life Sciences personnel). Otherwise we'd have been in bad shape." The relocation and basic site preparation was accomplished over the month of February 2000.

Benches, equipment, parts, and storage facilities had to move along with people. This phase of the relocation was

managed by Facilities project managers Richard Stanton (for the Engineering group into Building 62) and Bill Wu (for the Life Sciences group into Building 74). As with most allocations of space at the Lab, these changes affected more than just those people who moved. "A number of Engineering employees in Building 70A were scheduled to move into the space in Building 62," Stanton said. "We had designed the space for the 70A group. With the evacuation of 21 Engineering staff members from 29 into 62, not only was the space no longer available for the 70A people, but it wasn't tailored to the needs of the people who actually did move in." Facilities has worked hard to provide the alterations necessary for the new occupants to operate in the space.

The Life Sciences staff relocation also required some redesign of space. Bill Wu and his team had to move nine Life Sciences staff members, including Life Sciences Deputy Director Alope Chatterjee, into Building 74. This involved creating office space, including space appropriate for the needs of a division deputy director, and creating an electronics lab. "Just carpeting the offices alone in the two weeks we had to finish the job took a lot of extra hours from the Facilities team," said Wu. "But we managed to meet the deadline."

As a result of the Building 29 termite discovery, Lab pest control measures have changed. "We will now have termite and pest inspections every five years for all the wood buildings at the Lab," Berninzoni said. "This will be frequent enough to keep termite colonies from forming and causing the kind of damage we found in Building 29." Such inspections will also help identify and replace dry rot before it becomes a problem. Inspections have already helped to contain termite damage to Buildings 5, 10, 17, 27, 53, and 54. None of the minor damage found in those

buildings was extensive or irreversible. Unfortunately, the termite damage to the Building 29 trailers (A, B, C, and D) next to Building 29 was considerable. These trailers will be replaced as soon as possible. Building 29 itself has been condemned and will be removed. No one is allowed in the building without the specific permission of Facilities Department Head Bob Camper.

Everyone in Facilities wishes to recognize both Engineering and Life Sciences research groups for their cooperation in moving out on a moment's notice. These research staffs, some of whom were in the middle of experiments, were asked to pack up and move within two to four weeks. Many apologies and thanks to them are in order.

Stanton and Wu wished to recognize Ron Woods and Steve Waters (SPG superintendent) as well as the riggers and the many Facilities craftspeople involved for their prompt and efficient action in implementing the moves from Building 29 to Buildings 62 and 74.

FOCUS ON SERVICE

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turing, shipping, and installation—all of which takes time. Please keep this in mind when planning furniture orders that will be funded by year-end money. Requests that require development of layouts have to be submitted by June 1. Orders for incidentals (free standing items like file cabinets, chairs, bookcases, etc.) must be in by July 1.

The LBNL "Procedure for Obtaining New Furniture" and the summary of services included in the Turnkey subcontract, are on the Berkeley Lab website under "furniture" in the alphabetical listings.

If you have questions regarding furniture procurement, please call Architectural Section Lead Danica Truchlikova at 6511.

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This work was supported by the U.S. Department of Energy under Contract No. DE-AC03-76SF00098
Ernest Orlando Lawrence Berkeley National Laboratory, University of California
PUB-678 04/2000-4200

Printed on  recycled paper.